B7

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,912	09/11/2003	Masaaki Matsuoka	B422-242	6382

26272 7590 12/23/2004

COWAN LIEBOWITZ & LATMAN P.C
JOHN J TORRENTE
1133 AVE OF THE AMERICAS
1133 AVE OF THE AMERICAS
NEW YORK, NY 10017

EXAMINER	
WOODS, ERIC V	
ART UNIT	**PAPER NUMBER**
2672	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/660,912	MATSUOKA ET AL.	
	Examiner	Art Unit	
	Eric V Woods	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 September 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

Applicant is reminded of the proper form for the Brief Summary of the Invention section. Reciting sample claim(s) without accompanying explanation is not acceptable. Appropriate revision is required.

Content of Specification

(f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

That is, the Brief Summary of the Invention section should **not** primarily be a recitation of a sample claim.

The disclosure is objected to because of the following informalities:

-The "Brief Description of Drawings" section only lists "Fig. 2" as the drawing where clearly it has sub-figures (as applicant's specification shows on page 11), that is, 2(a-1), 2(a-2), 2(b-1), 2(b-2), and 2(b-3). This section must list the sub-parts of each drawing;

-Page 16, lines 15-18, step S12 is described as "has become free from its depression", where the correct, idiomatic English would be "is no longer depressed."

Appropriate correction is required.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 2, elements 210, 212, 214, 216, and 218; Fig. 3, elements 220, 222, 224, 226, and 228; Fig. 4, elements 230, 232, 234, 236, and 238. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because Fig. 5 has an element S12 labeled "Magnification Button is Free from Its Depression"; this is not correct, idiomatic English. The correct phrasing would be "Magnification Button No Longer Depressed?" Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to

the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 7 is objected to because of the following informalities: the terms "re-sized displayed" are used, where the exact meaning is unclear (and having two past tense verbs together like this is not – at least in the context of that particular sentence – correct) – the correct, idiomatic English would probably be "to be displayed in the re-sized form." Appropriate correction is required.

Claims 1-13 are objected to because the term "magnification manipulation" is used where the correct, technical, idiomatic term would be "zoom factor". Magnification

manipulation is a generic term that does not convey applicant's desired meaning from the specification.

Claim 7 is objected to because of the following informalities: the terms "fixed out" are used, where the correct, idiomatic English would be "has reached its maximum value" or similar wording.

Claim 12 is objected to because the terms "of the image of the image data" are used, where this is not correct idiomatic English and it is unclear what is being referred to. Examiner believes that applicant is attempting to reference the image in the memory, not the original image, and will make rejections based on this interpretation. Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 5 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. That is, claim 5 recites a computer program not on computer-readable media, which is functional descriptive material, that is, software per se, which is *prima facie* nonstatutory. In order to overcome this rejection, the words "tangibly embodied on computer-readable media" must be added to the claims.

Claims 3 and 11-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. That is, claims 3, 11, 12, and 13 are not technologically embodied – they appear to be somewhat abstract. To overcome

this rejection, the preamble wording of these claims needs to be changed to include the phrasing "A computer implemented image displaying method..." or similar.

To expedite a complete examination of the instant application the claims rejected above under 35 U.S.C. 101 (nonstatutory) are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of subject matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, and 5 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the memory and display control means, does not reasonably provide enablement for the re-size means and re-size control means. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. Figure 1 clearly shows two re-sizing units – one as element 17, labeled as "Re-size Circuit" and another as element 24, labeled as "Re-size Display Circuit." This poses a fundamental question as to which "re-size means" applicant is reciting in these claims – one or both circuits in combination or separately, particularly in light of multiple embodiments in the specification and the use of means plus function language. Further, it is unclear from the specification the precise order in which these two re-size circuits are used. For example, embodiment one in the specification (pages

7-8, lines 10-26 (p. 7) and 1-10 (p. 8) states that images are processed through both, whilst embodiment two only processes images through (p. 8, lines 15-27; p. 9, lines 1-26) one of the circuits. In addition, it is unclear which unit performs what portions of the calculations and how such circuits (p. 11, lines 22-27) interact, since one version uses only the claim 17 element.

Claims 2 and 4 are rejected under 35 U.S.C. 112, first paragraph, for not correcting the deficiencies of their parent claim(s).

Applicant must either amend the specification and/or drawings to include the essential matter not shown in claim 1 **without introducing new matter**, or amend the claims so that the recited structures are covered by the disclosures in the specification.

**Applicant needs to clarify the roles of both sets of circuits, their functionality, and when they are used in the claims so that examiner can clearly understand what applicant is attempting to patent.

Examiner will interpret the claims in such a way that any reference which has resizing means that perform the recited function in the given order (e.g. reads data from compact flash card or other memory, stores it in RAM, resizes it, etc.) will suffice as grounds for art rejections.

Claims 7-13 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for most limitations, including re-sizing memory, does not reasonably provide enablement for two separate memories, e.g. image display memory and generic first memory as recited in the claim. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly

connected, to make and/or use the invention commensurate in scope with these claims. That is, the only "recording means" provided in applicant's specification is the storage unit 62 in Fig. 1. There is only one memory provided in applicant's invention, that being DRAM 21. Applicant recites two memories in these claims. In Figure 1, applicant shows separate memory **areas** within the DRAM, which happen to correspond with the names of the recited sections (e.g. memory area, and image display memory area). However, the claims – in their broadest interpretation – disclose two **physically** separate memories, **not** two **logically** separate memories as is shown in Fig. 1 – in other words, two separate memory areas will not work to provide enablement for this claim.

Applicant **must** amend these claims to reflect that the two memories are separate memory **areas**, or else amend the disclosure to provide support for two separate memories as claimed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "temporarily" in claim 6 is a relative term that renders the claim indefinite. The term "temporarily" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The quantity

rendered indefinite is the time duration of the image is in the "image display buffer" as it not clear if the image is static, or constantly being updated during the time when the "variable magnification" or re-scaling is taking place, etc.

Claims 7-10 are rejected for not correcting the deficiencies of the parent claim.

Claim 7 is also rejected because the terms "re-sized displayed" in claim 6 is a relative term that renders the claim indefinite. The terms "re-sized displayed" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear at all what is actually being displayed, and what memory it is being drawn from.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al (US PGPub 2003/0222998 A1)('Yamauchi') in view of Matsumura (US PGPub 2002/0154228 A1)('Matsumura').

[Claim 1 is a device, while claim 3 is the method that the device recited in claim 1 performs; claim 5 is a computer program implementing the method of claim 3. As such, any rejection valid on claim 1 is equally valid and binding on claims 3 and 5 without further comment. Software is an obvious variation of a method claim. Further, both

references are digital cameras that are analogous art to applicant's work. Both of these references further note that cameras can have any of a number of operating systems, which would obviously mean that any programs were software running on a real-time OS]

As to claims 1, 3, and 5,

An image display device, comprising:

-First re-size means for reading out image data from a first memory that stores therein image data, and re-sizing the read-out image data (Yamauchi preview engine (e.g. element 104, Fig. 1b), connected to the CFC/SSF (the first memory, that is the flash memory/CFC/SSF – element 182) through the EM I/F (interface) element. The preview image resizes images prima facie ([0380], and also is disclosed to have resize ratios [0397-0398] that are set by the arm processor [0053], so it performs the resizing function recited above))

-A second memory for storing the image data re-sized by the first re-size means; (Yamauchi passes the resized image to the SDRAM (element 160, Fig. 1b) through the SDRAM controller (element 110, Fig. 1b) [0053]. The SDRAM (element 160) is the second memory recited by applicant.)

-Display control means for reading out image data from the second memory and re-sizing the read-out image data in accordance with a variable magnification manipulation for an image to make display means display thereon an image of the re-sized image data; and (Yamauchi discloses in 0037 that the preview engine would drive either a TV out (NTSC/PAL) or an LCD display, which fulfills the recited display means limitation.

Prima facie, if such image were to be displayed on the LCD, this would fulfill the displaying thereon limitation. In 0358, it is discussed that the preview engine can operate in the SDRAM input mode (see Fig. 56A, the Input Interface section has an arbiter module that switches input between CCDC and SDRAMC interface modes, with the SDRAMC standing for the SDRAM controller (e.g. element 110, Fig. 1b) pulling the data from the SDRAM, which covers the second memory limitation. Finally, variable magnification details are set by putting the desired values in the registers specified in 0394-0399 with valid vertical and horizontal image sizes and rescale ratios. Paragraphs 0434 and 0441-0444 teach the use of horizontal and vertical resize (e.g. zoom / magnify and shrink). Paragraphs 0400-0413 provide a few lines of sample code that illustrates how the preview operation is carried out, and it can process multiple frames. Further, the preview engine is taught to be controllable via the ARM processor and bus, which is especially clear in the first diagrams. Therefore, code for variable magnification could be inserted on the fly to handle each frame, or to continually enlarge or shrink an image as appropriate and/or desired. In 0697, it is disclosed that the controller chip contains general I/O pins that can be used for user keypad input, controls that include zoom, and others.)(Matsumura teaches an adaptive zoom mechanism, as illustrated in Fig. 1. The zoom key 46 allows the setting of a cumulative zoom coefficient, such that [0006, 0009] zoomed images are shown as they are enlarged.)

-Re-size control means for, while the variable magnification manipulation is carried out, instructing the display control means to make the display means display thereon the image re-sized by the display control means without newly reading out the image data

from the first memory, and after the variable magnification manipulation is fixed, instructing the first re-size means to re-size image data newly read out from the first memory, in accordance with contents of the fixed variable magnification manipulation. (Matsumura teaches an adaptive zoom mechanism, as illustrated in Fig. 1. The zoom key 46 allows the setting of a cumulative zoom coefficient, such that [0006, 0009] zoomed images are shown as they are enlarged. Further, Matsumura has a first (element 28, Figure 1) and a second memory (element 32, Figure 1) as recited by applicant. Clearly, the second memory is utilized such that the zoomed image can be clearly shown as the zoom factor is changed [0007, 0010]. Once the button is released, the final image is displayed. Clearly, the variable zoom of Matsumura covers the variable magnification limitation. The "fixed variable magnification manipulation" referred to merely occurs when the user of a camera such as that of Matsumura removes their finger from the zoom button, and the image is displayed.)(Yamauchi clearly states that the zoomed image is shown after the preview engine finishes processing it, as clearly stated in the above discussions. Also, it is clearly established that Yamauchi processes the zoomed image from the SDRAM through the preview image in one mode, but can pull from the first memory or flash through the CDC controller, so it would perform the recited zoom factor calculations on the images from the first memory after the zoom factor was found to save power, as this is disclosed in [0003].)

Reference Yamauchi teaches all of the above limitations except expressly detailing the variable zoom as recited in the last section of the claim, wherein the picture

is shown as the zoom is occurring (e.g. real-time updating of image size, etc.). Reference Matsumura clearly teaches this adaptive zoom factor as cited above.

The references as taught above are analogous art (all three are digital cameras) and include sections on image processing and image zooming, thus establishing analogous or similar problem-solving areas.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the digital camera platform and zooming of Yamauchi with the dynamic zoom apparatus of Matsumura, since Matsumura is a novel zoom apparatus for digital cameras [0002-0006] and Yamauchi is a digital camera platform [0003-0005]. [Claim 4 is analogous to claim 2, since it is the method implementing the apparatus of claim 2. See the above discussion in the rejection for claim 1 for details on this.]

As to claims 2 and 4,

An image display device according to claim 1, wherein when the contents of the fixed variable magnification manipulation correspond to a predetermined condition, the re-size control means stores image data which is newly read out from the first memory into the second memory without resizing.

Reference Yamauchi implicitly teaches this limitation, as clearly established in the rejection to claim 1, it allows varying horizontal and vertical zoom factors to be set. Obviously, such zoom factors could be set to 1.0, i.e. no resizing would be required. Further, the preview engine is disclosed to have enable / disable bits [0366], which could enable and disable various input ports and other important features. Reference

Matsumura clearly teaches [0043-0045] that the zoom coefficients can take on any value, and reference Yamauchi clearly teaches that digital cameras can have a keypad for entering data [0697], which could be used to set the zoom factor to exactly 1.0, e.g. no resizing required. If this were the case, then *prima facie* the image would not be resized, as the zoom factor would be 1. If the zoom factor is 1.0, this clearly *prima facie* is a "predetermined condition" as recited by applicant above, and the data would be read from the first memory into the second memory. The contents of the fixed variable magnification manipulation as recited above really translates to a numerical zoom factor for one or both directions, where it has been clearly established as above that both references allow the setting of separate vertical and horizontal zoom [0397-0398, Yamauchi] and composite zoom factors [Matsumura 0043-0045].

Yamauchi implicitly teaches the added limitations, while reference Matsumura explicitly teaches the missing portion concerning a predetermined condition. The references as taught above are analogous art (all three are digital cameras) and include sections on image processing and image zooming, thus establishing analogous or similar problem-solving areas.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the digital camera platform and zooming of Yamauchi with the dynamic zoom apparatus of Matsumura, since Matsumura is a novel zoom apparatus for digital cameras [0002-0006] and Yamauchi is a digital camera platform [0003-0005]. [Claim 4 is analogous to claim 2, since it is the method implementing the

apparatus of claim 2. See the above discussion in the rejection for claim 1 for details on this.]

Claim 6 is rejected under 35 U.S.C. 103(a) as unpatentable over Yamauchi in view of Matsumura as applied to claim 1 above (even though this claim is not dependent on it, much of the wording is copied), and further in view of Yamasaki (US PGPub 2002/0097327 A1)('Yamasaki').

As to claim 6,

A video signal processing system apparatus, comprising:

-Image pickup means for picking up an image; (Yamauchi Fig. 1b, element 150 "CCD module" inherently contains image pickup – a CCD is a type of imager, also specified that said element can be CMOS imager [0003, 0037])

-Recording means for recording the picked-up image from the recording medium and temporarily storing therein the read-out image data; (Yamauchi 0054 describe 'capture mode', which is where data is stored to the first memory or storage means (e.g. the compact flash card (CFC) – element 182, Fig. 1b), and 0057-0058 for other, video-based capture modes. See [0060, 0533]. The recording means is the external memory disclosed. The recording means setup is also shown in Matsumura Fig. 1. Both these figures clearly show a path from the CCD controller through the SDRAM controller to the recording medium, e.g. CFC. Further, in Matsumura the memory control circuit 30 is tied into the ADC through bus 25, which accomplishes the same thing, and the memory control circuit is analogous to the SDRAM controller 110 and DMA controller 162 of Yamauchi.)

-A memory for reading out the picked-up images from the recording medium and temporarily storing therein the read-out image data; (SDRAM 160 (Fig. 1b) in Yamauchi and SDRAM 28 (Fig. 1) in Matsumura. Examiner is unclear as to what this memory is supposed to be. It could also be the CFC / external flash memory as discussed immediately above, depending on how applicant actually intends this to be worded.)

-Re-size means for reading out the image from the memory and re-sizing the read-out image (elements 38 and 40, Fig. 1, Matsumura, the interpolation circuit 38 and the image processing circuit 40 perform the zooming, which data is obtained from the memory (28); Yamauchi, re-size means shown as preview engine 16, Fig. 1b, with appropriate characteristics of both covered in the rejection for claim 1);

-An image display memory for temporarily storing therein the image re-sized by the re-size means, in order to display the image; and (In any case the data has to pass through the SDRAM controller 110 in Yamauchi, which has image buffers 128 in the DSP subsystem 120 of Fig. 1a, which would perform the recited task, and as applicant is reciting "temporarily" this would imply a buffer. Also see SDRAM 160, Yamauchi; possibly the preview engine (with RAM) 104 shown in Fig. 4, Yamauchi, depending on how applicant is claiming this memory.)(Matsumura shows clearly that the line memory stores the image as it is being processed / scaled so it is displayed, while the main image before / during modification is stored in the SDRAM. The line memory would serve as the buffer / image display memory here).

-Re-size display means for reading out an image in a desired area from the image display memory to re-size and display the read-out image in the desired area,

(Yamasaki clearly shows in Figs. 5A and 5B and in [0041-0044] that images can be scrolled around when they are zoomed in or out, as recited by applicant. Yamauchi or Matsumura did not expressly teach this limitation. Clearly by specifying the area of the picture using these controls, the image in a desired image, etc. as recited above, that area of the image would *prima facie* be read out from memory.)

-Wherein while a desired variable magnification manipulation is carried out, the re-size display means reads out the image in the desired area to re-size and display the image read out, and after the variable magnification manipulation is fixed, an original image is read out from the memory and is re-sized by the re-size means to be stored in the image display memory, and the desired area of the re-sized image is displayed without re-sizing. (Matsumura teaches an adaptive zoom mechanism, as illustrated in Fig. 1. The zoom key 46 allows the setting of a cumulative zoom coefficient, such that [0006, 0009] zoomed images are shown as they are enlarged. Further, Matsumura has a first (element 28, Figure 1) and a second memory (element 32, Figure 1) as recited by applicant. Clearly, the second memory is utilized such that the zoomed image can be clearly shown as the zoom factor is changed [0007, 0010]. Once the button is released, the final image is displayed. Clearly, the variable zoom of Matsumura covers the variable magnification limitation. The "fixed variable magnification manipulation" referred to merely occurs when the user of a camera such as that of Matsumura removes their finger from the zoom button, and the image is displayed.)(Yamauchi clearly states that the zoomed image is shown after the preview engine finishes processing it, as clearly stated in the above discussions. Also, it is clearly established

that Yamauchi processes the zoomed image from the SDRAM through the preview image in one mode, but can pull from the first memory or flash through the CDC controller, so it would perform the recited zoom factor calculations on the images from the first memory after the zoom factor was found to save power, as this is disclosed in [0003].)(Further, this is backed by the fact that Yamasaki clearly teaches the use of variable magnification in Figs. 5A and 5B). [Finally, with respect to the limitation that an original image be read out by the re-size means and stored in the image display memory – this occurs with the preview engine of Yamauchi anyway, and with the zoom circuit of Matsumura as well. The preview image of Yamauchi sends the re-sized image to the LCD anyway, and the system of Yamasaki clearly allows the scrolling of a zoomed image, so it is *prima facie* obvious that said areas of said images would be displayed without needing to be re-sized again.]

References Yamauchi and Yamasaki are clearly analogous art, as they are both digital cameras, and share the same problem solving areas, and references Yamasaki and Matsumura clearly have the same problem solving area – they both deal with zoom functionality for digital cameras, while also probably being analogous art.

References Yamauchi and Matsumura teach most of the above limitations but do not expressly teach the zoomed area recited in the above claim, while reference Yamasaki does. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the digital cameras of Yamauchi and Yamasaki with the zoom functions of Matsumura, as since Matsumura is a novel zoom apparatus for digital cameras [0002-0006] and Yamauchi is a digital camera platform [0003-0005],

as is Yamasaki (see Fig. 1), and the advanced scrolling functionality provided by Yamasaki (Figs. 5A, 5B) would greatly enhance the functionality of the Matsumura zooming section, which it would be obvious to combine with the digital camera platform of Yamauchi.

As to claim 11,

A video signal processing method, comprising:

-A first storing step of reading out image data from a recording medium and storing the read-out image data in a first memory; (Yamauchi 0056 describes 'playback mode', which is where data is stored to the first memory or storage means (e.g. the compact flash card (CFC) – element 182, Fig. 1b). See [0060, 0533]. The storing step is performed utilizing the external memory disclosed. The recording means setup is also shown in Matsumura Fig. 1. Both these figures clearly show a path from the CCD controller through the SDRAM controller to the recording medium, e.g. CFC. Further, in Matsumura the memory control circuit 30 is tied into the ADC through bus 25, which accomplishes the same thing, and the memory control circuit is analogous to the SDRAM controller 110 and DMA controller 162 of Yamauchi. The data from the recording means is always read into the first memory (or SDRAM) anyway before it is processed, as the data must *prima facie* pass through the memory controller in both architectures anyway.)

-A second storing step of temporarily storing the image data re-sized in the re-size step in an image display memory to display the image data; and (In any case the data has to pass through the SDRAM controller 110 in Yamauchi, which has image buffers 128 in

the DSP subsystem 120 of Fig. 1a, which would perform the recited task, and as applicant is reciting "temporarily" this would imply a buffer. Also see SDRAM 160, Yamauchi; possibly the preview engine (with RAM) 104 shown in Fig. 4, Yamauchi, depending on how applicant is claiming this memory.)(Matsumura shows clearly that the line memory stores the image as it is being processed / scaled so it is displayed, while the main image before / during modification is stored in the SDRAM. The line memory would serve as the buffer / image display memory here).

-A re-size display step of reading out image data in a desired from the image display memory to re-size and display the image data in the desired area, (In any case the data has to pass through the SDRAM controller 110 in Yamauchi, which has image buffers 128 in the DSP subsystem 120 of Fig. 1a, which would perform the recited task, and as applicant is reciting "temporarily" this would imply a buffer. Also see SDRAM 160, Yamauchi; possibly the preview engine (with RAM) 104 shown in Fig. 4, Yamauchi, depending on how applicant is claiming this memory.)(Matsumura shows clearly that the line memory stores the image as it is being processed / scaled so it is displayed, while the main image before / during modification is stored in the SDRAM. The line memory would serve as the buffer / image display memory here).

-Wherein while a variable magnification manipulation is carried out, the image data in the desired area, and after the variable magnification manipulation is fixed, image data is read out from the first memory and is re-sized in the re-size step to be stored in the image display memory, and the image data in the desired area in the image display memory is displayed without being re-sized. (Matsumura teaches an adaptive zoom

mechanism, as illustrated in Fig. 1. The zoom key 46 allows the setting of a cumulative zoom coefficient, such that [0006, 0009] zoomed images are shown as they are enlarged. Further, Matsumura has a first (element 28, Figure 1) and a second memory (element 32, Figure 1) as recited by applicant. Clearly, the second memory is utilized such that the zoomed image can be clearly shown as the zoom factor is changed [0007, 0010]. Once the button is released, the final image is displayed. Clearly, the variable zoom of Matsumura covers the variable magnification limitation. The "fixed variable magnification manipulation" referred to merely occurs when the user of a camera such as that of Matsumura removes their finger from the zoom button, and the image is displayed.)(Yamauchi clearly states that the zoomed image is shown after the preview engine finishes processing it, as clearly stated in the above discussions. Also, it is clearly established that Yamauchi processes the zoomed image from the SDRAM through the preview image in one mode, but can pull from the first memory or flash through the CDC controller, so it would perform the recited zoom factor calculations on the images from the first memory after the zoom factor was found to save power, as this is disclosed in [0003].)(Further, this is backed by the fact that Yamasaki clearly teaches the use of variable magnification in Figs. 5A and 5B). [Finally, with respect to the limitation that an original image be read out by the re-size means and stored in the image display memory – this occurs with the preview engine of Yamauchi anyway, and with the zoom circuit of Matsumura as well. The preview image of Yamauchi sends the re-sized image to the LCD anyway, and the system of Yamasaki clearly allows the

scrolling of a zoomed image, so it is *prima facie* obvious that said areas of said images would be displayed without needing to be re-sized again.]

References Yamauchi and Yamasaki are clearly analogous art, as they are both digital cameras, and share the same problem solving areas, and references Yamasaki and Matsumura clearly have the same problem solving area – they both deal with zoom functionality for digital cameras, while also probably being analogous art.

References Yamauchi and Matsumura teach most of the above limitations but do not expressly teach the zoomed area recited in the above claim, while reference Yamasaki does. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the digital cameras of Yamauchi and Yamasaki with the zoom functions of Matsumura, as since Matsumura is a novel zoom apparatus for digital cameras [0002-0006] and Yamauchi is a digital camera platform [0003-0005], as is Yamasaki (see Fig. 1), and the advanced scrolling functionality provided by Yamasaki (Figs. 5A, 5B) would greatly enhance the functionality of the Matsumura zooming section, which it would be obvious to combine with the digital camera platform of Yamauchi.

As to claim 12,

A video signal processing method, comprising:

-A first display step of, when contents of a variable magnification manipulation is within a range of resolution of an original image stored in a memory, reading out the original image from the memory to re-size the read-out image data in accordance with the

contents and store the re-sized image data in an image display memory, and displaying a designated range of the image to be stored in the image display memory; and (Yamauchi 0056 describes 'playback mode', which is where data is stored to the first memory or storage means (e.g. the compact flash card (CFC) – element 182, Fig. 1b). See [0060, 0533]. The storing step is performed utilizing the external memory disclosed. The recording means setup is also shown in Matsumura Fig. 1. Both these figures clearly show a path from the CCD controller through the SDRAM controller to the recording medium, e.g. CFC. Further, in Matsumura the memory control circuit 30 is tied into the ADC through bus 25, which accomplishes the same thing, and the memory control circuit is analogous to the SDRAM controller 110 and DMA controller 162 of Yamauchi. The data from the recording means is always read into the first memory (or SDRAM) anyway before it is processed, as the data must *prima facie* pass through the memory controller in both architectures anyway.)

(Yamauchi discloses in 0037 that the preview engine would drive either a TV out (NTSC/PAL) or an LCD display, which fulfills the recited display means limitation. *Prima facie,* if such image were to be displayed on the LCD, this would fulfill the displaying thereon limitation. In 0358, it is discussed that the preview engine can operate in the SDRAM input mode (see Fig. 56A, the Input Interface section has an arbiter module that switches input between CCDC and SDRAMC interface modes, with the SDRAMC standing for the SDRAM controller (e.g. element 110, Fig. 1b) pulling the data from the SDRAM, which covers the second memory limitation. Finally, variable magnification details are set by putting the desired values in the registers specified in 0394-0399 with

valid vertical and horizontal image sizes and rescale ratios. Paragraphs 0434 and 0441-0444 teach the use of horizontal and vertical resize (e.g. zoom / magnify and shrink). Paragraphs 0400-0413 provide a few lines of sample code that illustrates how the preview operation is carried out, and it can process multiple frames. Further, the preview engine is taught to be controllable via the ARM processor and bus, which is especially clear in the first diagrams. Therefore, code for variable magnification could be inserted on the fly to handle each frame, or to continually enlarge or shrink an image as appropriate and/or desired. In 0697, it is disclosed that the controller chip contains general I/O pins that can be used for user keypad input, controls that include zoom, and others.)(Matsumura teaches an adaptive zoom mechanism, as illustrated in Fig. 1. The zoom key 46 allows the setting of a cumulative zoom coefficient, such that [0006, 0009] zoomed images are shown as they are enlarged.)

-A second display step of, when the contents of the variable magnification manipulation is beyond the range of the resolution of the original image stored in the memory, reading out the original image from the memory to store the read-out image data in the image display memory without re-sizing, and displaying the designated range of the image of the image data to be stored in the image display memory, by re-sizing the designated range in accordance with the contents.

(Matsumura teaches an adaptive zoom mechanism, as illustrated in Fig. 1. The zoom key 46 allows the setting of a cumulative zoom coefficient, such that [0006, 0009] zoomed images are shown as they are enlarged. Further, Matsumura has a first (element 28, Figure 1) and a second memory (element 32, Figure 1) as recited by

applicant. Clearly, the second memory is utilized such that the zoomed image can be clearly shown as the zoom factor is changed [0007, 0010]. Once the button is released, the final image is displayed. Clearly, the variable zoom of Matsumura covers the variable magnification limitation. The "fixed variable magnification manipulation" referred to merely occurs when the user of a camera such as that of Matsumura removes their finger from the zoom button, and the image is displayed.)(Yamauchi clearly states that the zoomed image is shown after the preview engine finishes processing it, as clearly stated in the above discussions. Also, it is clearly established that Yamauchi processes the zoomed image from the SDRAM through the preview image in one mode, but can pull from the first memory or flash through the CDC controller, so it would perform the recited zoom factor calculations on the images from the first memory after the zoom factor was found to save power, as this is disclosed in [0003].)(Further, this is backed by the fact that Yamasaki clearly teaches the use of variable magnification in Figs. 5A and 5B). [Finally, with respect to the limitation that an original image be read out by the re-size means and stored in the image display memory – this occurs with the preview engine of Yamauchi anyway, and with the zoom circuit of Matsumura as well. The preview image of Yamauchi sends the re-sized image to the LCD anyway, and the system of Yamasaki clearly allows the scrolling of a zoomed image, so it is *prima facie* obvious that said areas of said images would be displayed without needing to be re-sized again.] (See also logic in rejection to claim 11 and claim 1. Finally, the preview engine can read out without resizing (e.g. if the zoom factor were 1, for example), and the adaptive zoom of Matsumura.)

Clearly, the above discussions are enough to satisfy the recited limitations. Also, see the rejections for claims 1, 7, and 11 for any omitted logic, and the relevant portions of those rejections not copied immediately above are herein incorporated in their entirety by reference.

References Yamauchi and Yamasaki are clearly analogous art, as they are both digital cameras, and share the same problem solving areas, and references Yamasaki and Matsumura clearly have the same problem solving area – they both deal with zoom functionality for digital cameras, while also probably being analogous art.

References Yamauchi and Matsumura teach most of the above limitations but do not expressly teach the zoomed area recited in the above claim, while reference Yamasaki does. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the digital cameras of Yamauchi and Yamasaki with the zoom functions of Matsumura, as since Matsumura is a novel zoom apparatus for digital cameras [0002-0006] and Yamauchi is a digital camera platform [0003-0005], as is Yamasaki (see Fig. 1), and the advanced scrolling functionality provided by Yamasaki (Figs. 5A, 5B) would greatly enhance the functionality of the Matsumura zooming section, which it would be obvious to combine with the digital camera platform of Yamauchi.

As to claim 13,

A video signal processing method according to claim 12, further comprising the step of, while the variable magnification manipulation is carried out, re-sizing the designated

range of the image to be stored in the image display memory, with magnification during the manipulation and displaying the re-sizing range.

(The logic from an earlier rejection is given below, which covers all the limitations.)

(Matsumura teaches an adaptive zoom mechanism, as illustrated in Fig. 1. The zoom key 46 allows the setting of a cumulative zoom coefficient, such that [0006, 0009] zoomed images are shown as they are enlarged. Further, Matsumura has a first (element 28, Figure 1) and a second memory (element 32, Figure 1) as recited by applicant. Clearly, the second memory is utilized such that the zoomed image can be clearly shown as the zoom factor is changed [0007, 0010]. Once the button is released, the final image is displayed. Clearly, the variable zoom of Matsumura covers the variable magnification limitation. The "fixed variable magnification manipulation" referred to merely occurs when the user of a camera such as that of Matsumura removes their finger from the zoom button, and the image is displayed.)(Yamauchi clearly states that the zoomed image is shown after the preview engine finishes processing it, as clearly stated in the above discussions. Also, it is clearly established that Yamauchi processes the zoomed image from the SDRAM through the preview image in one mode, but can pull from the first memory or flash through the CDC controller, so it would perform the recited zoom factor calculations on the images from the first memory after the zoom factor was found to save power, as this is disclosed in [0003].)(Further, this is backed by the fact that Yamasaki clearly teaches the use of variable magnification in Figs. 5A and 5B). [Finally, with respect to the limitation that an original image be read out by the re-size means and stored in the image display

memory – this occurs with the preview engine of Yamauchi anyway, and with the zoom circuit of Matsumura as well. The preview image of Yamauchi sends the re-sized image to the LCD anyway, and the system of Yamasaki clearly allows the scrolling of a zoomed image, so it is *prima facie* obvious that said areas of said images would be displayed without needing to be re-sized again.]

Finally, the system of Yamasaki allows the user to select a desired range of the image, and the adaptive zoom of Yamauchi and Matsumura clearly allow the image to be displayed during the zoom in process, which if done using the preview engine of Yamauchi or the zoom system of Matsumura would clearly store the data in the "image display memory" which is merely the SDRAM or a portion thereof.

References Yamauchi and Yamasaki are clearly analogous art, as they are both digital cameras, and share the same problem solving areas, and references Yamasaki and Matsumura clearly have the same problem solving area – they both deal with zoom functionality for digital cameras, while also probably being analogous art.

References Yamauchi and Matsumura teach most of the above limitations but do not expressly teach the zoomed area recited in the above claim, while reference Yamasaki does. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the digital cameras of Yamauchi and Yamasaki with the zoom functions of Matsumura, as since Matsumura is a novel zoom apparatus for digital cameras [0002-0006] and Yamauchi is a digital camera platform [0003-0005], as is Yamasaki (see Fig. 1), and the advanced scrolling functionality provided by Yamasaki (Figs. 5A, 5B) would greatly enhance the functionality of the Matsumura

zooming section, which it would be obvious to combine with the digital camera platform of Yamauchi.

Allowable Subject Matter

Claims 7-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st and 2nd paragraphs, set forth in this Office action, if rewritten to correct the formal objections, and to include all of the limitations of the base claim and any intervening claims.

The claims described above (8-10) are allowable because they are dependent upon claim 7, which is found to have original subject matter. That is, claim 7 is allowable because the prior art does not disclose two separate resizing circuits as disclosed by applicant. Many different configurations of resize circuits existed at the time of the invention by application, incorporating two or three different memories, various types of pipelining mechanisms, adaptive zoom and resizing mechanisms, playback and region selection for adaptive zoom and viewing on the accompanying digital camera LCD. However, this second resizing mechanism appears to be unique, even though various schemas have been adopted for the stated purpose of preserving battery life and reducing power consumption. The stated rationale for its existence and the fact that it is claimed make these claims allowable. There is no substantial suggestions in the prior art to go in this direction, although it is known from the printer art to have multiple circuits that can perform sizing. While a rejection could theoretically be made on these grounds, it is debatable whether or not it would have sufficient merit to rebut applicant's presumption of patentability on the above claims (7-10).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V Woods whose telephone number is 703-305-0263. The examiner can normally be reached on M-F 7:30-5:00 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods

December 16, 2004

JEFFERY BRIER
PRIMARY EXAMINER